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PATENT

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Appl. No. 09/743,690
Amtd. dated December 22, 2003
Request for Continued Examination Under 37 C.F.R. §
1.114

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-15. (Cancelled)

16. (Currently amended) An isolated nucleic acid molecule encoding a polypeptide, ~~said nucleic acid molecule~~ comprising:

- (a) a vacuole targeting sequence; and
- (b) a plant-noxious pest control sequence linked in operable combination to said vacuole targeting sequence,

wherein the plant-noxious pest control sequence is a biotin binding sequence or a functionally equivalent variant or a fragment thereof of the biotin binding sequence.

17. (Previously presented) The nucleic acid molecule according to claim 16, wherein said nucleic acid molecule is a DNA molecule.

18. (Previously presented) A vector comprising the nucleic acid molecule according to claim 17.

19. (Previously presented) A host cell transformed with the vector according to claim 18.

20. (Currently amended) The host cell according to claim 19, wherein said cell is a plant cell.

21. (Currently amended) A method for producing the polypeptide encoded by the nucleic acid molecule according to claim 16, comprising the steps of:

- (a) culturing a host cell which has been transformed or transfected with a vector which expresses the encoded polypeptide; and optionally

(b) recovering the expressed polypeptide.

22. (Currently amended) ~~The A~~ method for producing a pest resistant plant, comprising transforming the plant genome to include at least one nucleic acid molecule according to claim 17.

23. (Previously presented) A transgenic plant that contains the nucleic acid molecule according to claim 17.

24-30. (Cancelled)

31. (Currently amended) A transgenic plant expressing pesticidally effective concentrations of the ~~chimeric~~ polypeptide encoded by the nucleic acid molecule according to claim 16.

32-52. (Cancelled)

53. (Previously presented) A method for producing a plant-noxious protein, the method comprising extracting the protein from a plant incorporating in its genome the nucleic acid molecule according to claim 17.

54. (Previously presented) Seed that is the product of the plant according to claim 23, wherein the seed comprises said nucleic acid molecule.

55. (Currently amended) The nucleic acid molecule of claim 16, wherein the vacuole targeting sequence is a potato proteinase inhibitor signal sequence.

56. (Currently amended) The nucleic acid molecule of claim 16, wherein the biotin binding sequence is a streptavidin sequence.

57. (Currently amended) The nucleic acid molecule of claim 56, wherein the streptavidin sequence is selected from a CORE streptavidin sequence, a synthetic CORE streptavidin sequence, and SYNSAV.

58. (Currently amended) The nucleic acid molecule of claim 56, wherein the streptavidin sequence comprises the sequence set forth in SEQ ID NO:10.

59. (Currently amended) The nucleic acid molecule of claim 16, wherein the biotin binding sequence is an avidin sequence.

60. (Currently amended) The nucleic acid molecule of claim 55, wherein the vacuole targeting sequence is a potato proteinase inhibitor I signal sequence.

61. (Currently amended) The nucleic acid molecule of claim 55, wherein the vacuole targeting sequence is a potato proteinase inhibitor II signal sequence.

62. (Currently amended) The nucleic acid molecule of claim 55, wherein the vacuole targeting sequence is a potato proteinase inhibitor I sequence and the biotin binding sequence is an avidin sequence.

63. (Currently amended) The nucleic acid molecule of claim 55, wherein the vacuole targeting sequence is a potato proteinase inhibitor II signal sequence and the biotin binding sequence is a streptavidin sequence.

64. (Currently amended) The nucleic acid molecule of claim 55, wherein the vacuole targeting sequence is an N-terminal targeting sequence.

65. (New) The nucleic acid sequence of claim 16, wherein the plant-noxious pest control sequence is a biotin binding sequence selected from the group comprising:

- (i) egg yolk biotin-binding proteins;
- (ii) serum;
- (iii) biotin-binding antibodies;

- (iv) biotin holocarboxylase synthetase;
- (v) biotinidase;
- (vi) biotin carboxyl carrier protein;
- (vii) seed biotin-binding protein;
- (viii) avidin;
- (ix) streptavidin; and
- (x) functionally equivalent variants or fragments of any one of (i) to (ix).